REMARKS

Claims 1-72 are pending after this amendment.

Applicants have amended claims 57, 61, 65, and 69 in order to more particularly define the invention. The amendments were not necessitated by the claim rejections. Applicants make no admission as to the patentability or unpatentability of the originally filed claims.

The amendments and remarks presented herein are in response to the Office Action dated November 5, 2003.

The Examiner stated that the Information Disclosure Statement filed on April 11, 2002 fails to comply with 37 CFR 1.98(a)(2). A copy of the Information Disclosure Statement is being submitted with copies of all references.

The Examiner rejected claims 1-72 under 35 U.S.C. §103(a) as being unpatentable over O'Connor et al. in view of Randall and further in view of Satoh. This rejection is respectfully traversed.

Regarding claim 1, O'Connor et al. does not disclose defining a tile according to an area of overlap among a set of layers, as claimed herein. In fact, as correctly stated by the Examiner in the Office Action, O'Connor et al. fails to disclose any technique of subdividing the image as a tile. However, the Examiner stated that such a feature is shown in the teaching of Randall. The Examiner further cited Satoh as teaching this feature.

Applicants respectfully disagree. Neither Satoh nor Randall teaches the feature of "defining a tile, the tile comprising a subset of the image pixels delimited according to an area of overlap among a set of at least two layers, so that a first portion of the image lies within the tile and a second portion of the image lies outside the tile," as recited in claim 1.

Randall divides the screen into strips, and divides the strips into individual tiles (see Fig. 1). The tiles of Randall are defined according to *window boundaries* (see col. 3, lines 13-18), and *not according to an area of overlap*, as claimed herein. For example, Fig. 1 of Randall shows tile 3 as encompassing the area covered by window 11, but does not show the tile being divided according to areas of overlap. By contrast, applying the present invention to the configuration shown in Fig. 1 of Randall would result in tile 3 being subdivided into two parts – the area where windows 11, 12, and 13 overlap, and the area where only windows 11 and 13 overlap. Randall fails to subdivide tile 3 in this manner. By providing such tile definition according to areas of overlap, the present invention provides greater efficiency, since all pixels in a tile can be processed alike. This is particularly useful when translucent layers are being processed, since combining multiple translucent layers can be a complex, time-intensive operation that is made more efficient when a number of pixels can be processed alike based on a given set of overlapping layers. By failing to disclose defining tiles in the manner claimed herein, Randall is unable to provide the distinct advantages of the present invention.

Satoh also fails to define an area of overlap as a tile. Region r1' in Fig. 13 of Satoh represents a portion of window W1 where window W3 overlaps. Region a' in Fig. 26 of Satoh represents a portion of window Wb where window Wa overlaps. Although these areas of overlap are shown in the drawings of Satoh, these are shown for illustrative purposes only, and there is no teaching of defining an area of overlap as a *tile*. In particular, at col. 26, lines 56-59, Satoh explicitly states that region a' is treated *the same way* as region a, so that no distinction is made in processing one as opposed to the other. Thus, the disclosure of Satoh fails to teach tiling based on overlap. In fact, since overlapping regions in Satoh are opaque, only the topmost window (or layer) need be considered when an overlap occurs. Since Satoh does not deal with processing translucent overlapping layers, there is no motivation in Satoh for generating a tile based on a particular area of overlap among windows. By contrast, in the present invention, such a tiling mechanism is very useful because it allows the processing of translucent layers to be performed more efficiently.

Accordingly, Applicants submit that none of the cited references, taken alone or in any combination, anticipates or makes obvious the invention of claim 1.

Claims 15, 29, and 43 recite limitations analogous to that discussed above in connection with claim 1. Claims 2-14, 16-28, 30-42, and 44-56 are variously dependent upon claims 1, 15, 29, and 43 and incorporate all of the limitations of

claims 1, 15, 29, and 43. Accordingly, Applicants respectfully submit that claims 1-56 are allowable over the prior art.

Claim 57 recites, in part, "subdividing the second layer along a straight line corresponding to an extension of the at least one edge of the first layer that lies within the bounds of the second layer, to obtain two tile subdivisions." By subdividing the second layer in this manner, the claimed invention provides a technique of generating tile subdivisions that can be more efficiently processed by a top-down image rendering method.

O'Connor et al. does not disclose the recited subdividing step, and in particular provides no hint or suggestion of subdividing along an extension of an edge, as recited in the claim. In fact, as correctly stated by the Examiner in the Office Action, O'Connor et al. fails to disclose any technique of subdividing the image as a tile. However, the Examiner stated that such a feature is shown in the teaching of Randall.

As discussed above, Randall divides the screen into strips, and divides the strips into individual tiles (see Fig. 1). The tiles of Randall are defined according to *window boundaries* (see col. 3, lines 13-18), and *not according to an extension of an edge of another layer*, as claimed herein. In addition, Randall fails to describe any technique for subdividing a second layer along a straight line corresponding to an extension of an edge of a first layer that lies within the bounds of the second layer, to obtain two tile subdivisions, as claimed herein. For example, Fig. 1 of Randall shows tile 3 as encompassing the area covered by window 11,

but does not show the tile being divided according to an extension of an edge of another layer. By contrast, applying the present invention to the configuration shown in Fig. 1 of Randall would result in tile 3 being subdivided into two parts – the area where windows 11, 12, and 13 overlap, and the area where only windows 11 and 13 overlap. The subdivision would be performed along a straight line corresponding to the extension of the edges of windows 12 and 13 that lie within the bounds of window 11. Randall fails to subdivide tile 3 in this manner.

By performing tile subdivision in the manner as claimed, the present invention provides a technique of generating tile subdivisions that can be more efficiently processed by a top-down image rendering method. By failing to disclose tile subdivision in the manner claimed herein, Randall is unable to provide the distinct advantages of the present invention.

Claims 61, 65, and 69 recite limitations analogous to that discussed above in connection with claim 57. Claims 58-60 are variously dependent upon claims 57, 61, 65, and 69 and incorporate all of the limitations of claims 57, 61, 65, and 69. Accordingly, Applicants respectfully submit that claims 58-60 are allowable over the prior art.

On the basis of the above amendments, consideration of this application and the early allowance of all claims herein are requested.

Should the Examiner wish to discuss the above amendments and remarks, or if the Examiner believes that for any reason direct contact with Applicants'

representative would help to advance the prosecution of this case to finality, the

Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,
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